

**Vulturopinae, a new Subfamily of the Psocidae ; type  
*Vulturops* gen. nov. (Platyp., Corrod.).**

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The following very interesting insect was found by me some time ago in Piura, in north-western Peru. It evidently forms the type not only of a new genus but of a new subfamily. New forms of the lower and more primitive types of insects, like the present, coming from the west coast region of South America, possess a greatly added interest from the fact that they will quite certainly throw much light on early land connections between South America, Africa and Australasia, when the faunas of all three regions shall have been more thoroughly investigated.

Aside from the novelty of this form, and the biogeographic interest attaching to it, it is remarkable as being termitophilous in habit. In view of all these facts, I venture to describe it for the purpose of record.

**VULTUROPINAE new subfamily.**

Differs from the Psocinae as follows:—

A pair of subanal cerci present, with a tubercle just above them; these and end of abdomen with hairs. Abdomen subglobular, apparently of ten segments; thorax and abdomen stout, rather suggestive of the form of *Sminthurus*. Only one pair of wings developed, the anterior pair, the costa and veins heavy and sparsely set with long curved spine-like bristles; posterior wings atrophied, calypter-like or mere pads.

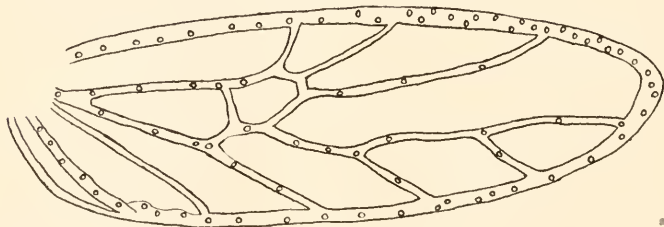


FIG. 1.—*Vulturops termitorum* n. sp.—Right anterior wing, upper surface, the bristles all detached.

Venation and form of wing unlike any of the Psocinae (see figure 1); one six-sided discal cell present, bounded by six cells which are contiguous to it. Wings non-functional as to flight. All the legs long but hind legs especially elongate, fitted for jumping; the hind tibiae very long, twice as long as others. Larva and nymph with only two tarsal joints, adult with three. First tarsal joint very elongate, others subequal and very short. Coxae all elongate but especially so the hind coxae, which are much larger and longer than the others. (The hind coxae seem to fit into an elongate vertical pleural furrow.) Tibiae and tarsi spined, femora with only fine hairs. Jumps like the Collembola.

*Type*, the following new genus:—

**Vulturops** gen. nov.

Face in profile like a vulture's beak with large fleshy protuberance at base; this appearance is due to the large, wide, rounded, convex facial tubercle, which is present as well in both larva and nymph. Crown of the head with long bristly hairs, covering also upper portion of facial tubercle. Eyes



FIG. 2.—Mandible.

*Vulturops termitorum* n. sp. (Greatly enlarged.)



Fig. 3.—Maxillary fork

facetted, no ocelli. Antennae with bristly hairs, about 25-jointed, last thirteen joints shorter than others, scape thickened, Mandibles strong, combining certain characters of *Troctes* and *Peripsocus*. Maxillary forks trifid, long, not stout, slightly curved (see figures 2 and 3). Maxillary palpi 4-jointed, much like those of *Peripsocus californicus*; the terminal joint flattened, spatulate, truncate and widened apically. Labial palpi 2-jointed, the terminal joint appearing somewhat flattened. Oesophageal sclerite and lingual glands rather similar to those of *P. californicus*.

Neck serrate above in profile, showing about eight or more notches and teeth. Prothorax reduced, shortened and narrowed; mesothorax and metathorax successively larger, both very high, about as wide as base of abdomen; all three divisions of thorax short. Nymph with abdomen and thorax quite same as in adult, and hardly to be described as thysanuriform. Larva and nymph not so bristly as adult, and showing no anal cerci. One adult shows a globular bladder-like sac attached to venter.

Wings (anterior) hemelytral both in appearance and function, about three times as long as wide, with strong heavy veins and complete strong costa extending entirely around border, appressed to the abdomen which they cover except anal end when abdomen is much swollen. One closed basal and one discal cell present; five longitudinal veins. Nymph with wings pad-like; larva without trace of them. Venation faintly visible in nymph.

All the tibiae with a pair of apical spurs. Tarsi 3-jointed, with a terminal pair of claws. The first tarsal joints not so strongly elongate in nymph as in adult. A pair of minute short spines on inside of middle of last tarsal joint of both larva and nymph shows where the joint becomes divided in adult into two joints.

Other characters as given above under family heading.

*Type*, the following new species:—

**Vulturops termitorum** sp. nov.

Length, about 1.25 to 1.5 mm. Color pale grayish-whitish, shading to straw-color on head and anal end of abdomen, mandibles and mouth parts more or less of deeper color. The wings, antennae, tibiae and tarsi with a fuscous shade, due to the armature of dusky bristles. Eyes brown.

Type and cotypes deposited in U. S. N. M.

Found in covered runways of *Hamitermes* sp. (det F. Silvestri) on outside of post, under house, Piura, Peru, January 18, 1911. Nine specimens, one being a larva, one a nymph, and seven adults. An adult was found at Payta, Peru (on the coast), January 3, 1911, indoors, where it had probably issued from termite galleries. Occasional individuals have since been found indoors at Piura, where all houses are badly infested with termites.

The curious wings of this form, quite unlike any flight-functioning wings known, both in their shape and in their veins, costa and bristle characters, are evidently functional as protectors of the soft globose abdomen. That such is the case is indicated by the erect curved bristles that spring from their upper surface. They have no doubt been developed in accordance with the termitophilous life-habit of the insect. This explains also why only the anterior wings are developed, while the posterior pair is atrophied and without any function whatever.

It may be said in this connection that search in South Africa for termitophilous Corrodentia should yield important results, since in that region termite evolution reaches its acme and the other forms of life bear much affinity with those of Australasia and South America.

The drawings were made with camera lucida, by Miss Helen T. Townsend, from mounts.

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ADDITIONS TO THE INSECT COLLECTION OF THE AMERICAN MUSEUM OF NATURAL HISTORY.—Mr. C. W. Leng has put his valuable collection of "long horned" beetles at the disposal of the American Museum of Natural History, New York City, for use in filling gaps in its collections. This means a gift of some 870 specimens covering nearly 300 species not hitherto acquired. Mr. John A. Grossbeck, who has been specializing for some time on the Geometridæ, has given to the museum his entire collection of these moths in addition to the series previously donated.—*Science*, April 26, 1912.